

(1)

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 08-328778

(43)Date of publication of application : 13.12.1996

(51)Int.Cl.

G06F 3/12

B41J 29/38

G09G 5/00

(21)Application number : 07-135229

(71)Applicant : TOSHIBA CORP

(22)Date of filing : 01.06.1995

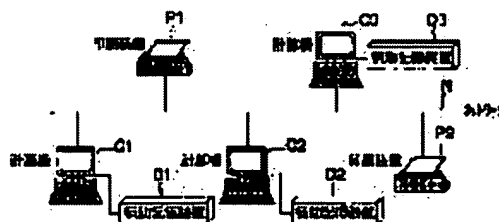
(72)Inventor : TANIGUCHI MASAHIKO  
NOZAKI TAKESHI

## (54) NETWORK PRINTING SYSTEM

## (57)Abstract:

**PURPOSE:** To provide a network printing system capable of shortening the printing waiting time of a user, reducing erroneous printing, improving the security maintaining function of a printed matter and making specified plural users able to obtain the same printed matter from an optional printer.

**CONSTITUTION:** For a printing job J1 generated by the user 1 in a computer C1, the 'job proprietary right' and 'password' of printing job management data are changed and the proprietary right of the printing job J1 is given to the other plural users 2 and 3 as well and held in the auxiliary storage device D1 of the computer C1. When the respective users 2 and 3, for instance, select the computer C1 from the printer P1 and access the printing job J1, after judging that the user is the proper proprietor of the printing job J1 by collating the password, the content data of the printing job J1 are read from the auxiliary storage device D1 of the computer C1, they are transmitted to the printer P1 and printing is executed.



## LEGAL STATUS

[Date of request for examination]

20.05.2002

[Date of sending the examiner's decision of rejection] 02.11.2004

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 3710518

[Date of registration] 19.08.2005

[Number of appeal against examiner's decision of rejection] 2004-24520

[Date of requesting appeal against examiner's decision of rejection] 01.12.2004

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

CLAIMS

---

[Claim(s)]

[Claim 1] The computer which has the function to generate printed information, and the airline printer which performs printing processing based on predetermined printed information, In the network printing system which performs printing processing with said airline printer based on the printed information which has the communication network which connects this airline printer and said computer of each other possible [ a communication link ], and was outputted from said computer Said computer possesses a storage means to memorize said printed information. Said airline printer A Request-to-Send means to perform the Request to Send of desired printed information is provided to said computer. Said computer In said airline printer of arbitration, it responds to the Request to Send of said printed information having been performed with said Request-to-Send means. As opposed to the airline printer which performed the Request to Send of the printed information for said printed information memorized by said storage means It is the network printing system characterized by having provided a printed information transmitting means to transmit through said communication network, and said airline printer possessing a printing means to perform printing processing based on the printed information transmitted with said printed information transmitting means.

[Claim 2] Two or more computers which have the function to generate printed information, and two or more airline printers which perform printing processing based on predetermined printed information, In the network printing system which performs printing processing with said airline printer of arbitration based on the printed information which has the communication network which connects two or more of these airline printer and said two or more computers of each other possible [ a communication link ], and was outputted from said computer Each of two or more of said computers possesses a storage means to memorize two or more printed information. Each of two or more of said airline printers Provide a selection means to choose the computer which generated said printed information, and a Request-to-Send means to perform the Request to Send of desired printed information to the computer chosen with this selection means, and each of two or more of said computers is set to said airline printer of arbitration. It responds to it having been chosen with said selection means and the Request to Send of said printed information having been performed with said Request-to-Send means. A printed information transmitting means to transmit said printed information memorized by said storage means through said communication network to the airline printer which performed the Request to Send of the printed information, It is the network printing system characterized by having provided and each of two or more of said airline printers possessing a printing means to perform printing processing based on the printed information transmitted with said printed information transmitting means.

[Claim 3] When each of two or more of said computers is chosen with said selection means of said airline printer of arbitration, A list transmitting means to transmit the list of the printed information which can be printed to said airline printer through said communication network among the printed information memorized by said storage means is provided. Said each Request-to-Send means of two or more of said airline printers The network printing system according to claim 2 characterized by choosing desired printed information and performing the Request to Send of the printed information

based on the list of the printed information transmitted with said list transmitting means of the computer chosen with said selection means.

[Claim 4] Two or more computers which have the function to generate printed information, and two or more airline printers of each other which perform printing processing based on predetermined printed information are connected through a communication network. Based on the printed information in which they communicated mutually and were generated by the user by said computer It is the network printing system to which 1 or two or more users perform printing processing with said airline printer of arbitration. Each of two or more of said computers A storage means to memorize two or more printed information generated by said user, A setting means to set up the owner of that printed information based on the identification information to which it was assigned by each of two or more of said users about each of two or more printed information memorized by this storage means, It provides. Each of two or more of said airline printers Provide a selection means to choose the computer which generated said printed information, and a Request-to-Send means to perform the Request to Send of desired printed information to the computer chosen with this selection means, and each of two or more of said computers is set to said airline printer of arbitration. When it is chosen with said selection means and the Request to Send of said printed information is performed by said Request-to-Send means, About said printed information to which the Request to Send was performed with said Request-to-Send means, it is inputted from said airline printer by those who performed the Request to Send. A decision means by which those who performed the Request to Send judge whether you are the owner of said printed information set up with said setting means based on the identification information transmitted through said communication network, When those who performed the Request to Send of said printed information with this decision means are judged to be the owner of that printed information, A printed information transmitting means to transmit said printed information memorized by said storage means to the airline printer which performed the Request to Send of the printed information is provided. Each of two or more of said airline printers The network printing system characterized by providing a printing means to perform printing processing based on the printed information transmitted with said printed information transmitting means.

[Claim 5] Said setting means is a network printing system according to claim 4 characterized by permitting a setup of the owner of the printed information only to the user who generated the printed information about each of two or more printed information memorized by said storage means.

[Claim 6] When each of two or more of said computers manages the printing number of cases of said printed information corresponding to the number of the owners of said printed information set up with said setting means and printing processing based on said printed information is normally performed with the printing means of said airline printer, As a result of subtracting the value of said printing number of cases with the printing number-of-cases management tool which subtracts the value of said printing number of cases every [ 1 ], and this printing number-of-cases management tool, when that value becomes zero, The network printing system according to claim 4 characterized by providing further a printed information deletion means to delete the printed information from said storage means.

[Claim 7] Each of two or more of said computers is a network printing system according to claim 4 characterized by providing further an expiration date setting means to set up the expiration date as a term in which printing processing is possible with said airline printer of arbitration, and a printed information deletion means to delete that printed information from said storage means when the expiration date set up with this expiration date setting means passes about each of two or more printed information generated by said user.

---

[Translation done.]

\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

DETAILED DESCRIPTION

---

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the network printing system outputted from the airline printer of arbitration which has connected to the same network images, such as a document drawn up by the computer connected to networks, such as LAN.

[0002]

[Description of the Prior Art] Recently, network environments, such as LAN, are built using two or more computers and two or more airline printers, and many network printing systems which output the image created by the computer from an airline printer can see.

[0003] In such a network printing system, when image information (print job), such as a document drawn up for the purpose of printing with an airline printer by a certain calculating machine, occurred, the print job had transmitted immediately the specified airline printer or print job on a network to the print server which carries out recording management.

[0004] In each airline printer and a print server, the print job which received is once accumulated in the print queue (print queue) of FIFO (First In First Out) which consists of buffer memory etc., and printing activation is carried out from the print job which went into the print queue previously.

[0005]

[Problem(s) to be Solved by the Invention] Thus, in the management method of the print job in the conventional network printing system, although the print queue of the airline printer on other networks was vacant in order to transmit the print job to the specified airline printer or print server on a network as print data, if a print job occurs by the calculating machine, it might be said that many print jobs will be accumulated in the specified airline printer.

[0006] Moreover, in each airline printer, in order to carry out printing activation from the print job which went into the print queue previously, when even print-out of one sheet had the print job which prints huge number of sheets in the print queue in front of an airline printer, it performed from the print job. That is, in order to carry out printing activation from the airline printer always specified beforehand, even if the airline printer on other networks whose print queues are in the situation in which printing activation is immediately possible in the sky existed, there was a trouble of giving the great printing latency time to the user who tried to perform print-out of one sheet.

[0007] Moreover, since printing activation is serially made in an airline printer and the sequence in which the print job went into the print queue of a print server, when one airline printer is used by two or more persons, mislaying of printed matter may take place. That is, the information on printed matter will be accessed by human beings other than itself, and there was a trouble that a security protection became difficult.

[0008] Moreover, the airline printer side had management of a print job, as for the contents of the print queue, since printing activation was carried out immediately, when printed matter had been outputted accidentally, printed matter without the need was outputted and blotting out completely the print job which has made it generate accidentally from a calculating-machine side had the trouble of being

difficult.

[0009] furthermore, the printed matter outputted in the conventional network printing system when the same document was [ two or more sections ] necessary at a meeting etc. -- further -- a reproducing unit - a duplicate -- or it was required to act as two or more shot student of the same print job.

[0010] Then, this invention heightens the security-protection capacity of the information on the printed matter in reduction of the printing latency time in an airline printer, reduction of a misprint, and a common airline printer in the airline printer connected to networks, such as LAN, and two or more specified men offer the network printing system aiming at the ability of the same printed matter to come to hand from the airline printer of arbitration further.

[0011]

[Means for Solving the Problem] The computer which has the function in which the network printing system of this invention generates printed information, It has the communication network which connects the airline printer which performs printing processing based on predetermined printed information, and this airline printer and said computer of each other possible [ a communication link ]. In the network printing system which performs printing processing with said airline printer based on the printed information outputted from said computer said computer A storage means to memorize said printed information is provided. Said airline printer A Request-to-Send means to perform the Request to Send of desired printed information is provided to said computer. Said computer In said airline printer of arbitration, it responds to the Request to Send of said printed information having been performed with said Request-to-Send means. As opposed to the airline printer which performed the Request to Send of the printed information for said printed information memorized by said storage means Providing a printed information transmitting means to transmit through said communication network, said airline printer possesses a printing means to perform printing processing based on the printed information transmitted with said printed information transmitting means.

[0012] Moreover, the network printing system of this invention Two or more computers which have the function to generate printed information, and two or more airline printers which perform printing processing based on predetermined printed information, In the network printing system which performs printing processing with said airline printer of arbitration based on the printed information which has the communication network which connects two or more of these airline printer and said two or more computers of each other possible [ a communication link ], and was outputted from said computer Each of two or more of said computers possesses a storage means to memorize two or more printed information. Each of two or more of said airline printers Provide a selection means to choose the computer which generated said printed information, and a Request-to-Send means to perform the Request to Send of desired printed information to the computer chosen with this selection means, and each of two or more of said computers is set to said airline printer of arbitration. It responds to it having been chosen with said selection means and the Request to Send of said printed information having been performed with said Request-to-Send means. As opposed to the airline printer which performed the Request to Send of the printed information for said printed information memorized by said storage means Providing a printed information transmitting means to transmit through said communication network, each of two or more of said airline printers possesses a printing means to perform printing processing based on the printed information transmitted with said printed information transmitting means.

[0013] Furthermore, the network printing system of this invention Two or more computers which have the function to generate printed information, and two or more airline printers of each other which perform printing processing based on predetermined printed information are connected through a communication network. Based on the printed information in which they communicated mutually and were generated by the user by said computer It is the network printing system to which 1 or two or more users perform printing processing with said airline printer of arbitration. Each of two or more of said computers A storage means to memorize two or more printed information generated by said user, A setting means to set up the owner of that printed information based on the identification information to which it was assigned by each of two or more of said users about each of two or more printed

information memorized by this storage means is provided. A selection means by which each of two or more of said airline printers chooses the computer which generated said printed information, A Request-to-Send means to perform the Request to Send of desired printed information is provided to the computer chosen with this selection means. Each of two or more of said computers When it is chosen with said selection means and the Request to Send of said printed information is performed by said Request-to-Send means in said airline printer of arbitration, About said printed information to which the Request to Send was performed with said Request-to-Send means, it is inputted from said airline printer by those who performed the Request to Send. A decision means by which those who performed the Request to Send judge whether you are the owner of said printed information set up with said setting means based on the identification information transmitted through said communication network, When those who performed the Request to Send of said printed information with this decision means are judged to be the owner of that printed information, Providing a printed information transmitting means to transmit said printed information memorized by said storage means to the airline printer which performed the Request to Send of the printed information, each of two or more of said airline printers possesses a printing means to perform printing processing based on the printed information transmitted with said printed information transmitting means.

[0014]

[Function] Memorize the printed information generated by the computer for the storage means of the computer, and a user chooses said computer from the airline printer of arbitration connected on the network. If the Request to Send of desired printed information is performed, said selected computer Reduction of the printing latency time and reduction of a misprint can be aimed at by transmitting said printed information memorized by the storage means to the airline printer which performed said Request to Send, and performing printing processing in the airline printer based on said printed information which received.

[0015] Moreover, it is generated by said user and the owner of the printed information is set up based on the identification information assigned to each user about each of the printed information memorized by said storage means. Each user who granted two or more users ownership to the same printed information, and was able to grant ownership chooses said computer from the airline printer of arbitration connected on the network. If the Request to Send of desired printed information is performed, said selected computer When those who performed the Request to Send of said printed information judge whether you are the owner of said printed information and it is judged that he is the owner of the printed information, Said printed information memorized by said storage means is transmitted to the airline printer which performed the Request to Send of the printed information. In the airline printer By performing printing processing based on said printed information which received, improvement in reduction of a user's printing latency time, reduction of a misprint, and the security-protection function of printed matter can be aimed at, and two or more specified users become possible [ that the same printed matter comes to hand from the airline printer of arbitration ] further.

[0016]

[Example] Hereafter, one example of this invention is explained with reference to a drawing. Drawing 1 shows the network printing structure of a system concerning this example. In drawing 1 , two or more airline printers P1 and P2 of each other are connected with two or more computers C1, C2, and C3 through communication network N. the users 1, 2, and 3 by whom, as for this network printing system, individual identification information (ID etc.) was given -- use \*\*\*\* -- it is like.

[0017] By each computers C1, C2, and C3, a document etc. is drawn up using various application software. Auxiliary storage units D1, D2, and D3 are connected to each of computers C1, C2, and C3, and image information (it may be hereafter called printed information or the contents data of printing), such as a document drawn up for the purpose of printing with either of the airline printers P1 and P2 especially, is saved at these auxiliary storage units D1, D2, and D3.

[0018] In all the computers C1, C2, and C3 connected to Network N, and airline printers P1 and P2 The print job manager memorized by the memory provided on each basis of control of CPU provided in each is followed. Management processing of the print job generated in each of calculating machines C1, C2,

and C3 is performed while calculating machines C1, C2, and C3 and airline printers P1 and P2 communicate mutually.

[0019] A predetermined item is chosen as each airline printers P1 and P2 display means, such as a display unit, and based on the displayed contents, or input means, such as a mouse for entering a password etc. and a keyboard, are provided in them.

[0020] Here, when the document aiming at printing with either of the airline printers P1 and P2 by computers C1, C2, and C3 etc. is drawn up and auxiliary storage units D1, D2, and D3 memorize, it is called "generating of a print job."

[0021] Next, the DS of the print job memorized by auxiliary storage units D1, D2, and D3 is explained with reference to drawing 2. A print job is roughly divided and consists of print job management data and contents data of printing.

[0022] Print job management data consists of "Job ID", the "generating person ID", "job generating time", a "job expiration date", the "job maintenance calculating machine ID", "job ownership", the "job duplicate number of cases", a "password", and "a contents header of printing."

[0023] The contents data of printing consist of contents data, such as a document drawn up by each calculating machines C1, C2, and C3 the control information of the airline printer about printed matter, and for the purpose of printing.

[0024] At the time of print job generating, "Job ID" is added in order to identify the print job, it is the thing of a proper and modification is impossible for each print job. "The job generating person ID" is for identifying the person who it is added [ person ] at the time of print job generating, and generated the print job. This the "job generating person ID" is the thing of a proper, and modification of him is impossible for each print job.

[0025] "Job generating time" is what showed the time at the time of print job generating, and modification will be impossible once it is added. "The job maintenance calculating machine ID" is what showed the identification information (ID) of the calculating machine by which the print job was generated at the time of print job generating, and it is used in order to recognize, whether the print job is held at the auxiliary storage unit of which calculating machine, and. This the "job maintenance computer ID" cannot be changed.

[0026] The owner of a print job is what showed who it was, and, as for "job ownership", same ID or the same name as a print job generating person is usually recorded at the time of print job generating. "Job ownership" can be changed using a print job manager. Namely, the same print job can be owned now by two or more persons by adding other ID or names of people.

[0027] The "job duplicate number of cases" shows of what the section printed matter can be obtained from one print job. Since it is in agreement with the number of job ownership persons, the "job duplicate number of cases" is not rewritable.

[0028] It is used in order to judge whether the owner and printing executor of a "password" of the print job set up beforehand are the same as "job ownership." A setup and modification are possible for this "password" because the generating person of that print job uses a print job manager.

[0029] As for the "job expiration date", the print job expresses the effective period, i.e., the period which can be printed out, on Network N. This setup is performed using a print job manager.

[0030] "The contents header of printing" can attach now an easy explanatory note for a user to identify what the printed matter obtained from the print job is. A print job manager can also describe the contents header of printing.

[0031] Next, the outline of the function of a print job manager is explained with reference to drawing 3. A print job manager is for managing a print job using the above-mentioned print job management data.

[0032] A print job manager regards it as print job termination, when a "job expiration date" passes, when the "job duplicate number of cases" was set to "0." However, the print job termination by the "job expiration date" having passed has [ the "job duplicate number of cases" ] priority over termination by having been set to "0." Moreover, as for elimination, the generating person of a print job can do a print job always only to the print job which he generated.

[0033] A print job manager displays the detailed information of the print job of the calculating machines



C1, C2, and C3 which the print job manager has started. Moreover, it notifies that the print job of the addressing to a user occurred to the user by whom password collating at the time of the print job printing activation demand having been transmitted from either of the airline printers P1 and P1 through listing of the printer in which the output of the remainder of the storage capacity of the auxiliary storage units D1, D2, and D3 of the computers C1, C2, and C3 and desired printed information is possible, and communication network N, and the ownership of a print job were granted.

[0034] First, in a calculating machine C1, a user 1 draws up a document etc. and generates a print job J1 (refer to the arrow head of drawing 3 (1)). At this time, the item of the "job ownership" of print job management data and a "password" is inputted, to other users other than user 1, the ownership of that print job is granted or the input of items, such as a "job expiration date" and the "contents header of printing", is also performed.

[0035] Thus, the generated print job J1 has a configuration as shown in drawing 2 , and puts the generated print job J1 under management of a print job manager.

[0036] Next, a print job J1 is not immediately \*\*\*\*\* (ed) by the airline printer on Network N, but it is held at the auxiliary storage unit D1 of the computer C1 which the print job J1 generated (refer to the arrow head of drawing 3 (2)).

[0037] At this time, to the remainder of the memory capacity of the auxiliary storage unit D1 of a calculating machine C1, when the amount of information of a print job J1 is larger, to the user 1 who generated the print job J1, secondary memory capacity gives warning of an insufficient purport, and a print job manager makes an invalid the generated print job J1.

[0038] Thus, as long as the storage capacity of each auxiliary storage units D1, D2, and D3 allows by the print job manager by managing the storage capacity of auxiliary storage units D1, D2, and D3, many print jobs are generated by the same calculating machines C1, C2, and C3, and it becomes possible to make two or more print jobs J1-J5 hold to each auxiliary storage unit D1, D2, and D3.

[0039] And if printing activation is connected for example, directed to communication network N from an airline printer P1 (refer to the arrow head of drawing 3 (3)), then, a calculating machine C1 will transmit a print job J1 for the first time (refer to the arrow head of drawing 3 (4)), and the airline printer P1 which received it will start printing (refer to the arrow head of drawing 3 (5)).

[0040] The calculating machine C1 which the print job J1 generated can change the print job management data of a print job J1, and it carries out to the generating person 1 of a print job J1, i.e., a user.

[0041] In the computer C1 by which the generating person of a print job J1 generated the print job J1 when changing the contents of print job management data The basis of control by CPU which started the print job manager and followed the program, The information on desired is inputted using a keyboard, a mouse, etc., and the contents of the print job management data memorized by the auxiliary storage unit D1 are rewritten based on the inputted information.

[0042] A print job manager does not take the queuing method of a print job like the conventional printer server, but it can transmit a print job to the Request to Send of the print job from communication network N without being caught by the chronological-order watch of a print job.

[0043] Thus, it becomes possible by making a print job J1 hold to a computer C1, and managing it using a print job manager, for either of the airline printers P1 and P2 connected to communication network N to be also can also be printed, and for a user to be able to do printing activation from the vacant airline printers P1 and P2, therefore to mitigate the printing latency time.

[0044] Moreover, since it is held at the auxiliary storage unit D1 of a calculating machine C1 and the generating person of a print job J1 can do elimination always if needed about the print job J1, the print job J1 generated by the calculating machine C1 can prevent the mistaken output to an airline printer.

[0045] Next, with reference to the flow chart shown in drawing 4 and drawing 5 , the processing of operation by the print job manager in the network printing system of drawing 1 is explained. Here, especially the ownership of a print job explains the case where only those who generated the print job have.

[0046] In drawing 4 , it progresses to step S1 first, and a user generates some print jobs (a print job J1 -

print job J5) by the calculating machine C1. At step S2, as each generated print jobs J1-J5 mentioned above, it is stored in the auxiliary storage unit D1 of the computer C1 which the print jobs J1-J5 generated. That is, if two or more documents etc. are drawn up for the purpose of printing, they will be memorized by the auxiliary storage unit D1 as contents data of printing of each print jobs J1-J5.

[0047] moreover -- since only the user who generated the print job has the ownership of each print jobs J1-J5 here -- as print job management data -- each print job J1- it is not necessary to make a change of "the job ownership person ID" and the "password" which are memorized by the auxiliary storage unit D1 for every J5 therefore -- as print job management data -- each print job J1- "the job ownership person ID" and the "password" which are memorized by the auxiliary storage unit D1 for every J5 belong to the user. furthermore, the need -- responding -- as print job management data -- the input of a "job expiration date", the "contents header of printing", etc., etc. -- carrying out -- these -- each print job J1- an auxiliary storage unit D1 memorizes for every J5.

[0048] In case each print jobs J1-J5 are memorized to an auxiliary storage unit D1, the memory capacity of the auxiliary storage unit D1 at that time and the amount of information of each print jobs J1-J5 are measured (step S3). And only when the memory capacity of an auxiliary storage unit D1 is larger, the print job is memorized to an auxiliary storage unit D1, and it progresses to step S5. On the other hand, when the memory capacity of an auxiliary storage unit D1 is insufficient, it progresses to step S4, and to the user who generated the print job, the memory capacity of an auxiliary storage unit D1 gives warning of an insufficient purport, and makes an invalid the generated print job.

[0049] At step S5, for example, it connects on the same network as the computer C1 by which the user who generated the print job holds the print job, it goes to the basis of an airline printer P1, a computer C1 is chosen with a mouse etc. based on the contents currently displayed on the display unit of an airline printer P1, and it progresses to step S6.

[0050] At step S6, if a computer C1 is chosen, an airline printer P1 will ask all the print job management data currently held to the selected computer C1 through communication network N. At this time, the management data of the print job \*\*\*\*\* (ed) on communication network N are "Job ID", the "job generating person ID", "job generating time", a "job expiration date", the "job maintenance calculating machine ID", the "job duplicate number of cases", and the "contents header of printing." A "password" at least must not be transmitted to an airline printer P1.

[0051] Next, at step S7, if an airline printer P1 receives the print job management data of the print jobs J1-J5 which a calculating machine C1 holds from a calculating machine C1, it will display them on the display unit of an airline printer P1, and will progress to step S8.

[0052] At step S8, a user chooses a print job (for example, print job J1) to output with the mouse of an airline printer P1 etc., and progresses to step S9. In step S9, an airline printer P1 displays a message on the display unit, and the input of a password is urged to it to a user, and it progresses to step S10.

[0053] At step S10, if a user enters a password for the keyboard of an airline printer P1 etc. clitteringly, it will be transmitted to the computer C1 previously chosen through communication network N, and the password will progress to step S11.

[0054] At step S11, a calculating machine C1 collates the password of the user who is, the ownership person, i.e., the job generating person, of the password from an airline printer P1, and the selected print job J1, and the user who wishes printing activation checks whether you are the ownership person of the just print job J1.

[0055] If both password is in agreement, it will progress to step S12 of drawing 5 R> 5, and a calculating machine C1 will transmit the contents data of printing of the print job J1 with a printing demand to the airline printer P1 with request to receipt immediately. And an airline printer P1 receives the contents data of printing of a print job J1, and they carry out printing activation based on it.

[0056] If that is notified to a calculating machine C1 through communication network N from an airline printer P1 after printing activation of a print job J1 is normally completed in an airline printer P1, it progresses to step S13, and only "1" will subtract the value of the "job duplicate number of cases" of the print job management data of a print job J1, and a calculating machine C1 will progress to step S14.

[0057] At step S14, when the value of the "job duplicate number of cases" is "0", it progresses to step

S15, and a print job J1 regards it as termination, and is eliminated from the auxiliary storage unit D1 of a computer C1. On the other hand, when the "job duplicate number of cases" is not "0", it progresses to step S16, and the printing activation also of either of the airline printers P1 and P2 is attained about a print job P1 until the print job J1 is held at an auxiliary storage unit D1 and the "expiration date" of print job management data passes, or until the print job J1 is deleted by the generating person of a print job J1.

[0058] Thus, either of the airline printers P1 and P2 on communication network N to which the computer C1 holding a print job J1 is connected can also access a print job J1, can perform printing activation, and can aim at reduction of a user's printing latency time.

[0059] Moreover, explanation of drawing 4 and drawing 5 is effective, when two or more users are in Network N, each generates a print job and it carries out printing activation from the airline printer of the arbitration on Network N. In this case, in order to check whether the ownership person and printing executor of a print job are in agreement using a password, even if airline printers P1 and P2 are common use, the security-protection capacity of printed matter improves compared with the conventional network printing system. Moreover, network confusion can be avoided by transmitting only print job management data without transmitting all the contents of the print job at once.

[0060] Next, with reference to drawing 6 and drawing 7, other processings of operation by the print job manager in the network printing system of drawing 1 are explained. The case where the ownership of a print job is granted to two or more users other than those who generated the print job is explained especially here.

[0061] Drawing 6 is the flow chart which showed the processing of operation by the print job manager in case the ownership of a print job is granted to two or more users, and drawing 7 shows the data flow in a network printing system corresponding to the flow chart of drawing 6.

[0062] In drawing 6, it progresses to step S20 first, and a user 1 generates a print job J1 by the calculating machine C1 (refer to the arrow head of drawing 7 (1)). At step S21, the generated print job J1 is stored in the auxiliary storage unit D1 of a computer C1 (refer to the arrow head of drawing 7 (2)). That is, if a document etc. is drawn up for the purpose of printing, an auxiliary storage unit D1 will memorize as contents data of printing of a print job J1, and predetermined print job management data will also be memorized by coincidence at an auxiliary storage unit D1.

[0063] Next, step S3 of drawing 4 - S4 are processed, and it progresses to step S22 of drawing 6. Now, the user 1 is to hand a user 2 and a user 3 the printed matter printed based on a print job J1 here.

[0064] In this case, a user 1 grants a user 2 and a user 3 job ownership in step S22 using a print job manager (refer to the arrow head of drawing 7 (3)). That is, each ID of a user 2 and a user 3 and a password are entered from input devices, such as a keyboard of a calculating machine C1, and are added to the "job ownership" of the print job management data of a print job J1, and a "password", respectively. In connection with it, "job two or more number of cases" of the print job management data of a print job J1 is updated. Here, since job ownership was granted to users 1, 2, and 3, "job two or more number of cases" is set to "3."

[0065] At this time, a print job J1 serves as possession of a user 1, a user 2, and a user 3. That is, the above-mentioned of printing activation of a print job J1 becomes more nearly said [ the same ] of a user 2 and a user 3 than the airline printer (an airline printer 1, airline printer 2) of the arbitration on Network N possible [ other than a user 1 ].

[0066] Next, if it progresses to step S23 and a user 1 grants the ownership of a user 2 and a user 3 to a print job J1, a print job manager will notify a purport with ownership modification of a print job J1 to a user 2 and a user 3 (refer to the arrow head of drawing 7 (4)).

[0067] A method like an electronic mail may be made to perform this notice. If it gets to know that the print job J1 addressed to itself has occurred by the above-mentioned notice which the user 2 and the user 3 received by calculating machines C2 and C3, respectively, it will progress to step S24.

[0068] Processing actuation at step S24 is the same as explanation of steps S5-S16 of drawing 4 and drawing 5 R> 5. Each users' 1, 2, and 3 computer C1 holding a print job J1 is accessed from the airline printer (either of the airline printers P1 and P2) of the arbitration on a network, respectively, and printing

activation is performed after performing collating with a password (refer to the arrow head of drawing 7 R> 7 (5)).

[0069] That is, for example, when a user 2 does printing activation, at step S5, a user 2 advances to an airline printer P1, and a computer C1 is chosen first. An airline printer P1 asks all the print job management data currently held to the selected calculating machine C1 through Network N, and progresses to step S7, and an airline printer P1 receives the print job management data of the print job which the calculating machine C1 transmitted from the calculating machine C1 holds, and expresses them to a display unit as step S6. Next, if it progresses to step S8 and a user 2 chooses a print job J1 from an airline printer P1, in step S9, an airline printer P1 will demand the input of a password from a user 2. And at step S10, a user 2 is transmitted to the computer C1 by which the password was previously chosen when the password was clitteringly entered for the keyboard of an airline printer P1 etc., and it progresses to step S11. At step S11, a calculating machine C1 collates the password from an airline printer P1, and the password memorized as print job management data of the selected print job J1. If the user 2 who wishes printing activation checks whether you are the ownership person of the just print job J1 and both password is in agreement Progressing to step S12 of drawing 5, a calculating machine C1 transmits the contents data of printing of the print job J1 with a printing demand to the airline printer P1 with request to receipt immediately. And an airline printer P1 receives the contents data of printing of a print job J1, and carries out printing activation.

[0070] As mentioned above, when a user 1 generates a print job J1, if, as for the "job duplicate number of cases", a user 1 grants a user 2 and a user 3 the ownership of a print job J1 to having been "1", the "job duplicate number of cases" of a print job J1 will be set to "3." This supports the number of job ownership persons. Suppose that the user 2 performed printing activation of a print job J1 here according to the above-mentioned procedure from the airline printer P1. After printing activation is completed, the value of the "job duplicate number of cases" is subtracted automatically, and it is set to "2." In this case, since the job duplicate number of cases is not "0", it is not considered that a print job J1 is termination. Furthermore, if remaining users 1 and users 3 perform printing activation of a print job J1 continuously, the job duplicate number of cases is set to "0", and a print job J1 will be ended and will be eliminated from on the auxiliary storage unit D1 of a computer C1.

[0071] Thus, the basis of control according to the print job manager in the network printing system of this example, About the print job J1 which the user 1 generated in the calculating machine C1 The "job ownership" of print job management data and a "password" are changed. The ownership of a print job J1 is granted to two or more of other users 2 and 3, and it holds to the auxiliary storage unit D1 of a computer C1. On the other hand, to each of users 2 and 3 Notify generating of a print job J1 and each of each users 2 and 3 chooses a computer C1 from the airline printer (for example, airline printer P1) of arbitration. In case a print job J1 is accessed, after it collates a password and the user judges that he is the ownership person of the just print job J1 By transmitting the contents data of a print job J1 to read-out from the auxiliary storage unit D1 of a calculating machine C1, transmitting it to an airline printer P1, and performing printing activation While the security protection of printed matter secures, two or more users are enabled for the printed matter of the same contents to come to hand from the airline printer of arbitration, and reduction of a user's printing latency time and reduction of a misprint can be aimed at.

[0072] Moreover, in order to manage duplicate number of sheets by the "job duplicate number of cases" of print job management data, inexhaustible supply printing activation can be barred. Moreover, when the "job expiration date" of the print job management data set up about the generated print job J1 passes, even if all the job ownership persons (users 1, 2, and 3) omit printing activation, it is considered that the print job J1 is maintenance termination, and a print job J1 is eliminated from on the auxiliary storage unit D1 of a computer C1. [0073] for which elimination from the auxiliary storage unit D1 of a print job J1 which became unnecessary by this, without being referred to becomes easy, and can use storage capacity efficiently

[Effect of the Invention] As explained above, according to this invention, improvement in reduction of a user's printing latency time, reduction of a misprint, and the security-protection function of printed

matter can be aimed at, and a network printing system with two or more specified users able to receive the same printed matter from the airline printer of arbitration further can be offered.

---

[Translation done.]

\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

DESCRIPTION OF DRAWINGS

---

[Brief Description of the Drawings]

[Drawing 1] Drawing having shown the network printing structure of a system concerning one example of this invention.

[Drawing 2] Drawing for explaining the DS of the print job memorized by the auxiliary storage unit.

[Drawing 3] Drawing for explaining the outline of the function of a print job manager.

[Drawing 4] The flow chart for explaining the processing of operation by the print job manager in the network printing system of drawing 1 .

[Drawing 5] The flow chart for explaining the processing of operation by the print job manager in the network printing system of drawing 1 .

[Drawing 6] The flow chart for explaining other processings of operation by the print job manager in the network printing system of drawing 1 .

[Drawing 7] Drawing for explaining the data flow in a network printing system corresponding to the flow chart of drawing 6 .

[Description of Notations]

C1, C2, C3 [ -- Communication network. ] -- A computer, D1, D2, D3 -- An auxiliary storage unit, P1, P2 -- An airline printer, N

---

[Translation done.]